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species undetermined, Mockingbird (*Mimus polyglottos*), Red-breasted Nuthatch (*Sitta canadensis*), and Varied Thrush (*Ixoreus naevius*), and for *Juniperus virginiana*, Fish Crow (*Corvus ossifragus*), Grackle (*Quiscalus quiscula*), Song Sparrow (*Melospiza melodia*) and Redbird (*Cardinalis cardinalis*).

The author's principal conclusions are that: "Birds are responsible for most of the dissemination of the junipers," and "General observations seem to point to the dense southern stands as a center for the dissemination along the lines of bird migration."—W. L. M.

McGREGOR'S "MANUAL OF PHILIPPINE BIRDS."—1—This work admirably meets the heretofore keenly felt need for a single volume of convenient size, containing descriptions of Philippine birds. In fact the only previous reference work covering the region is the bulky Catalogue of Birds in the British Museum, not only the size of which but its rarity precluding general use.

McGregor's Manual strikes us as having been planned with great care to secure essentials and leave out non-essentials; and the plan is followed consistently throughout. The scientific name, an English name, and such native names as seem to be commonly used with some degree of accuracy are given for each species. A well selected synonymy provides references to the important literature pertaining to each species. Detailed distribution, by islands, is given in each case. Concise descriptions, including metric measurements are given for each and where there are plumage variations, these are separately described in detail. Brief characterizations of the genera and larger groups, together with simple but direct keys, render identification a less formidable task to the reader unfamiliar with oriental birds than would otherwise be the case.

The system of classification followed by McGregor is that set forth in Sharpe's Hand-List. The reason advanced for adopting the system is the adequate one, that it is "both convenient and well known." It is a pity that American ornithologists cannot allow themselves to fall into line with the rest of the world, to the end that uniformity of arrangement may be attained. There will always be differences of opinion over the relative positions of certain groups; but such minor points might well be conceded in the faunistic treatment of birds, "for the sake of convenience and uniformity."

We are interested to observe that McGregor, an independent, systematic student of the bird-life of a large archipelago where there are

many closely allied forms in a group and where the problems of speciation are manifold, throughout his book wholly ignores the *trinomial* designation. And this too in view of the historical fact that McGregor used to be an ardent trinomialist, describing "subspecies" galore! Everything nameable at all is treated in his new book as a binomial, just as does Sharpe and many other English authorities always referred to by Americans in this connection as "conservatives." Do we not see the pendulum beginning to swing back again from trinomialism towards the consistent and non-ambiguous binomial?

Perhaps the dogged adherent to the *trinomial* will before long be referred to as the "old-fashioned conservative!"

The present reviewer is unable in the rather brief time allotted to the perusal of McGregor's Manual, to find anything in it not worthy of commendation in a work of this sort. Of course, if the reviewer were familiar with the Philippine ornith, it is quite probable that he might differ with the author in minor details of characterization, or range. But he is not; and in common with a host of other students will always turn to the Manual when information within its scope is desired, with confidence that it is in its entirety unimpeachable as an authority in its field.—J. G.

THE VERTEBRATE FAUNA OF CHESHIRE AND LIVERPOOL BAY. Edited by T. A. COWARD, F. Z. S. Volume I. The Mammals and Birds of Cheshire. By T. A. Coward and C. Oldham, F. Z. S., M. B. O. U. With illustrations from photographs by Thomas Baddeley. Witherby & Co., London, 1910; 8 vo., pp. 1-XXXII + 1-472. Price 26 shillings net.

The two volumes of this work cover the mammals, birds, reptiles, and batrachians of the region, about as much space being devoted to the birds as to all the other groups combined. This is partly due to the fact that there are many more species of birds in the region than of the other classes of animals, and partly because the birds' habits and life histories are so much better known as to warrant treatment in greater detail.

In the introduction some space is given to a quotation of the local regulations for the protection of wild birds and a discussion of their effectiveness, the conclusion being that on the whole the laws are futile and inadequate, tho it is admitted that a few species have noticeably increased in numbers thru their enforcement.

A discussion of the migratory movements of the birds follows, in which they are divided into groups—summer residents, winter residents, birds of passage, partial migrants, irregular migrants, and casual wanderers. In the body of the work two hundred and thirty-one species are treated, as having been satisfactorily

1. A Manual of Philippine Birds by Richard C. McGregor | Part I | Galliformes to Eurylaemiformes | [Seal] | Manila | Bureau of Printing | 1909 8 vo., pp. i-x, 1-412. Part II | Passeriformes (otherwise same title page), pp. i-xvi, 413-769. Part I was issued April 15, 1909, and Part II, January 31, 1910.

rily proved to inhabit Cheshire during the present and last centuries. The common and scientific names of each species are given, and also the various local names in use. Many of the latter are very curious, and all are of interest. The status in the county of each species is given in brief, in a single sentence at the head of each one treated.

The classification and nomenclature adopted is that used in Saunders' "List of British Birds", 1907 edition, binomials being used except when a British race is distinguishable from Continental birds of the same species. "In these cases we have thought it advisable to adopt the trinomial system of nomenclature, which in addition to other advantages shows plainly the real affinities of the local races or sub-species." Why, after such a concession, it was not thought advisable to use the system uniformly throughout the work, it is hard to understand.

The manner of occurrence together with the life histories of the various species are treated at length while the food of some of the birds is discussed in detail. There are numerous excellent illustrations, mostly general views showing the habitats of various species of birds.—H. S. S.

A FEW NOTES ON THE HABITS, LIFE HISTORY AND ECONOMIC VALUE OF DOVES. The Raising of Young Waxwings, *Ampeles* [sic] *cedrorum*. By William H. Gates. Bulletin 14, Gulf Biologic Station, Cameron, La.; pp. 1-32; 1909.

In this paper Gates gives many interesting details of the life history of doves about Cameron, La. It is noteworthy that nesting begins no earlier there than it does much farther north, for instance in southern Indiana, that is, about April 1. The writer notes a high proportion of nests destroyed, namely 80 out of 111. The most important natural enemies are the black king snake and the brown rat.

Incubation consumes from 19 to 21 days. The first egg is hatched from 24 to 36 hours before the second, resulting in a marked difference in the size of the young which is noticeable up to the third week. Gates says: "The crop capacity of young doves is enormous; up to the time they are three or four weeks old it is possible for them to hold over one-half of their weight of food in the crop. It is likely that in the state of nature the young are not fed more than three times a day, generally but twice, and often not more than once, especially after the young get to be a week or so old and do not need to be brooded." "The average of 78 weighings taken before and after feeding showed an increase of 36 percent of their own weight. The maximum amount of food given, among those that were observed, was in the case of a squab that weighed 53 grams at 5 o'clock, before feeding, and at 6:15 swung the

balance at 88 grams, showing that 35 grams of food had been taken, or a crop capacity of over 66 percent of its own weight." It is not surprising therefore that the young birds gain weight very rapidly. "Birds kept in the house gained, respectively, from 31 and 34 grams to 65 and 67 grams during the third week, and up to 95.5 and 96 grams during the next."

"Doves raised by the writer have been found to eat between 75 percent and 120 percent of their own weight of food per day, from the time they are hatched up to the time they are three weeks old. From then on the amount lessens rapidly till they become adult, when they will eat but 7 percent to 10 percent of their own weight." The actual weight of food consumed during the first 3 weeks is from 8 to 28 grams per day, from the third week on from 10 to 18 grams. In the wild state doves probably consume from 15 to 20 percent of their own weight of food. On the basis of 15 percent "it would take 33 grams a day to maintain a pair of doves, which allowing an average of 30 grams a day for food fed to the young during six weeks of the summer, amounts to over 30 pounds a year; at which rate it would take but 66 pairs to consume a ton of feed a year."

Gates finds that only a small proportion of the food is grain and that wholly waste. Most of the subsistence is obtained from the seeds of weeds. He mentions the shooting of doves on account of the alleged scattering by them of the seeds of indigo weed, a pest in rice. The doves eat the seeds for the nourishment contained in them and it certainly is an unusual happening for one to pass thru the strong gizzard entire. This unjust persecution of the doves should stop.

The writer presents the first evidence we have seen that doves ever voluntarily take living insects; he says birds in captivity were seen eating ants. Notes are given also on the nesting and food habits, and the rearing of the young of the nonpareil, bluebird and cedar-bird.—W. L. M.

AN ORNITHOLOGICAL RECONNAISSANCE OF NORTHEASTERN VENEZUELA BY C. WILLIAM BEEBE (=Zoologica, vol. 1, no. 3, Dec., 1909, pp. 67-114, figs. 21-37). The main body of the paper is taken up with the list of birds observed, with more or less extensive annotations pertaining to the life histories, habits, color variations, etc. Parts one, two, and three are devoted to the itinerary and accounts of the character of the country explored, while part five is a general summing up of ecological conditions, together with a comparison of conditions in Venezuela and New York State.

Descriptions of nesting habits of many of the species are of interest, especially so from the standpoint of such considerations as those presented in the paper by Peck on the same sub-